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## TABLE OF CONTENTS.


PAGE.

EDITORIAL ARTICLES:—Protection for the Originators of New Plants.—Save the Big Trees . . . . . 365
The Gardens of the Fountain at Nimes. (Illustrated.) . . . . . 366
The Alleghanies of Virginia in June . . . . . *Anna M. Vail.* 367

NEW OR LITTLE KNOWN PLANTS:—Schubertia grandiflora, Mart. and Zucc. (With figure.) . . . . . *S. W.* 368
New Orchids . . . . . *R. A. Rolfe.* 368

PLANT NOTES:—Hypericum Kalmianum and Lobelia Kalmii . . . . . *E. J. Hill.* 370

CULTURAL DEPARTMENT:—Notes on Shrubs . . . . . *J. G. J.* 370
Notes on American Plants . . . . . *F. H. Horsford.* 371
Cinerarias . . . . . *W. T.* 372
The Vegetable Garden . . . . . *Professor W. F. Massey.* 373
The Dewberry . . . . . *Professor E. S. Goff.* 373
Erpetion reniforme.—Californian Lilies . . . . . *E. O. Orpet.* 373
Nymphæa rosacea.—Nymphæa pygmæa alba . . . . . *G.* 374

THE FOREST:—The Sihlwald.—I . . . . . *Gifford Pinchot.* 374

CORRESPONDENCE:—Experiments in Producing Rain . . . . . *M. C.* 374
The Crandall Currant . . . . . *George W. Campbell.* 375
The Utah Black Currant . . . . . *Thomas Meehan.* 375

RECENT PUBLICATIONS . . . . . 375

NOTES . . . . . 376

ILLUSTRATIONS:—Schubertia grandiflora, Fig. 48 . . . . . 369
Roman Baths, Gardens of the Fountain, Nimes . . . . . 371


## Protection for the Originators of New Plants.

HOW the originators or introducers of new varieties of plants can be protected in what seems to be clearly their right to some special proprietorship of their productions is a subject that has often been discussed. At the late Convention of Nurserymen in this city the fact was emphasized that very few persons in this country who had originated valuable varieties of fruit had received any direct benefit from it. As an illustration it was stated that Mr. Worden, who brought out the Grape named after him, and which many people esteem, all things considered, as the best black Grape grown, is now a poor man, and never made $500 from this valuable introduction. If inventors are protected by law against the piracy of ideas which have cost them labor and study, it would seem just that a man should be able to reap some reward for having brought out after much thought and experiment a new fruit which may add to the wealth and comfort of millions.

Different plans for patenting plants have been often advocated, but the essential objection to them all was well stated by Professor Bailey more than a year ago in this journal (ii., 188), as follows: "It is exceedingly doubtful if a patent could be secured for varieties which spring up from a chance seedling, and most of our varieties come in this way. But if the patent were granted there are innumerable cases in which no jury of experts could agree concerning the distinctness of varieties." Few cautious persons would be willing to swear to the identity of a given Strawberry or Rose, and it would be difficult to prove in any given instance that the flower or fruit in question was not a new one closely resembling an older variety.

In an earlier number, vol. ii., p. 46, Mr. A. L. Bancroft, of California, suggested a horticultural register wherein separate plants like Roses, Chrysanthemums, Ferns, Apples, Grapes, could be kept and numbered, on a system similar to that adopted in the various herd-books where choice live stock is registered, but we then pointed out that a herd-book was devised for a purpose quite distinct from those which it is proposed to secure by a system of plant registration. Individual animals are registered so that they may be identified, that their pedigree may be established and that purity of blood may be maintained in a given breed or strain of live stock. In the case of plants, where the registration of one individual must stand for an entire class and where the parentage is often unknown and always of secondary importance, it is difficult to see how such a list would prevent a duplication of names for the same plant or the selling of different plants under the same name. Mr. Bancroft's scheme has been carefully elaborated since then, and a plan of registration has been adopted by the California State Horticultural Society. We have no space here to go into the details of the plan, which have been very carefully elaborated, but as it was discussed it seemed to the nurserymen in their convention that it was quite too cumbersome to be practical and effective.

There is, however, considerable protection already given to the originator of a new fruit in the copyright law. Mr. Hoyt, of New Canaan, Connecticut, stated that he had taken out such a right on his label of the Green Mountain Grape and had been instructed by eminent legal authority that no man could use this title on a label to a Grape vine and sell it without his consent. It is true that if any one should buy a plant of Mr. Hoyt he could propagate it as largely as he chose for his own use, or could sell the vines under another name, but there would be little temptation to a grower to sell a really valuable variety under a name which would conceal its identity. The name is the very thing the plant-pirate most wants, and he very often sells nothing else but the name of a good variety, attaching it to an entirely different plant from the one it really belongs to. This registered trade-mark has proved of value too in preventing the sale of spurious plants under the label so registered, so that copyrighting assists in preventing the sale by unauthorized persons both of genuine plants and their counterfeits.

It is hard to see how much greater protection than this can be secured by a horticultural register. The plan of registering new plants has, however, many merits in other directions. It would be of interest to have an accurate description of any new plant filed in some public office, with its portrait and parentage so far as known. We should like to compare a plant and berry of Hovey's Seedling Strawberry as grown to-day with a preserved specimen of the original plant and its berry, or accurate portraits and descriptions of them, to see if any variation from the type had taken place. In questions of identity the register might give some assistance, but the inherent difficulties of accurate varietal description would remain. An organized effort to secure registration would be of value, too, in enlisting the co-operation of all horticulturists to secure to originators their rights, for, although no system yet devised can add much to the protection now given by the trade-mark laws, this protection would be much more effective if it had an active and united public sentiment behind it.

Of course this protection to the introducers of new plants would make such plants more expensive for a time, just as patented machinery and copyrighted literature is more expensive. But although this increased price might be considered a burden upon horticulture the advantages gained would be positive and important. Chief among these would be the encouragement offered to careful experiments in hybridizing. When growers can feel sure that they will reap some reward from discoveries in this field, we may entertain a reasonable hope that the breeding of plants may be reduced to something like a system or a science.

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It is well known that several of the groves of the Giant Sequoia in the California Mountains have been invaded by the axe and that lumber from many of the Big Trees has gone into the market as Redwood. Most of the timberlands in which the Sequoia occurs have passed into the hands of lumbermen and speculators; but according to the Visalia *Delta*, one grove of these grand trees still remains in Tulare County in the hands of the Government. An enthusiastic description of the tract is given, but this was brought out by the fact that surveyors and locators are

now exploring the land and preparing to pounce upon it in the expectation that it is about to be opened for entry.

It seems that five years ago several townships in this county were withdrawn from entry, on account of alleged fraudulent practices, and it has been understood that they would not be restored until after official examination into the character of the surveys. It was believed, therefore, that if the Department changed its decision ample public notice would be given. It has turned out, however, that some of the Sequoia lands have been suddenly restored, and were at once secured by speculators and lumbermen, who seemed to have been prepared for the occasion by some private notification. The presence of locators in the tract mentioned naturally arouses the suspicion that the last remaining grove is doomed to the fate of all the others.

May we not hope that Secretary Noble will interpose to prevent such a disaster? Surely the Government should hesitate before surrendering to destruction this last cluster of these world-famous trees. If it ever is a duty of civilized society to preserve for posterity objects of natural beauty or grandeur, nothing more worthy of such protection than these giant trees can be named. They ought to remain the property of the nation forever.

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## The Gardens of the Fountain at Nimes.*

FEW gardens in Europe equal in beauty those at Nimes, which the people call simply *La Fontaine*, considering, it seems, the rest of the enclosure a mere appanage of the fountain itself. Few gardens, even in Italy, have greater historic interest, and none in any land surpass them in individuality or in the happy combination of formal and natural elements. Their earliest features date from before the time of Christ; their latest were created in our own century. Yet all now blend in an enchanting harmony of happily managed contrasts.

The so-called fountain is really a great spring filling a basin seventy-five feet in diameter and twenty-five feet in depth, in the natural rock on a steep hill-side, and fed from natural underground reservoirs, some of which are so distant that the waters will suddenly surge up in it at times when no rain has fallen at Nimes. To its existence was due the existence of the city. Around it in Celtic times grew up a small town called Nemoz, whose inhabitants naturally held its plenteous waters sacred. Under Roman rule and the Latinized name of Nemausus this grew to a place of first importance. The fountain was nearer the centre of the Roman than of the modern city, and was utilized in baths which necessitated a group of beautiful buildings, some relics of which still survive.

The baths proper and most of the accessory structures were probably destroyed in the invasion of the Visigoths in the fifth century; and they or the quick-succeeding Franks broke the dikes which had regulated the flow of the waters and caused them to seek a new channel down the hill-side. But the sacred edifice (its ruins are now popularly called the Temple of Diana), which stood against the hill-side, not far from the spring, was saved and became the church of a house of nuns upon which, in 991, the fountain and the adjacent lands had been bestowed. It was called the *Abbaye de St.-Sauveur-de-la-Font*, and many were the disputes between its inmates and the townsfolk, as the centuries rolled by, over the possession of the spring and of the mills turned by its escaping waters, as well as over the right to use certain meadows adjoining the canal as a place of public promenade.

A settlement was made in favor of the town in 1352, but disputes still went on with regard to the rights of the nuns over the fountain itself and the canal, until the monastery was razed, in 1563, the nuns were dispersed, and, in the religious conflicts of the following year, it was reduced to the ruinous, but picturesque, state in which we now see it.

For generations after, the spring was constantly discussed, with a view to increasing and regulating its flow, and thus preventing that almost total drying up which, in late summer, brought the local industries to a stand-still. Trees were planted, and there was much digging among the old baths, but little was accomplished until 1744, when Jacques Philippe Maréchal, Director of Fortifications for the Province of Languedoc, presented a plan which was accepted, and associated with himself in its execution an architect of Nimes named Dardailhon, whose scheme had seemed to him the best of the preceding ones. The work was at once begun, and was finished in nine years at a cost of about 1,000,000 francs.

Let us see now how the gardens look to-day. The main approach is through a wide boulevard, planted with double rows of trees on either side, which brings us to the great iron gates seen in the distance in our picture (see page 371). Hence to right and left the eye follows broad tree-bordered canals, widening into many-angled basins at the two corners of the garden, and thence to the right, leading the waters of the distant spring down a wide shady street, which really deserves the name of *Quai de la Fontaine*. Entering the gates we are in a large rectangular space, through which run quadruple lines of ancient trees, leading the eye to the bath as the central feature of the garden. Other avenues surround the space; beyond them runs the canal and still more avenues. The canal is broken in its circuit of this space only by the entrance path at the gateway, and opposite by two bridge-like paths between which it is continued as a square basin. The avenue-trees are chiefly Lindens and Horse-chestnuts. As we follow the bridge-like paths, we see in front of us—in the centre of a wide expanse of gravel still planted with shady avenues—the modernized remains of the baths, which our illustration shows from the opposite point of view. They consist simply of a great square, sunken and flooded basin, surrounded by a colonnade, behind which lie small rooms or cells, and in the centre of which rises an island, where many changes were made, notably those in the centre of the picture, where the angle vases and centre group take the place of interesting Roman relics. Of course, all the balustrades and other vases, which add so much to the beauty of the arrangement, are works of Maréchal's time. Indeed, the whole thing is so distinctly Rococo in its general effect and in almost all its details that it is hard to believe any part of it antedates the age of Louis Quinze. The island is a mass of blossoming shrubs, largely broad-leaved evergreens, amid which, in late July, great sprays of Pink Oleander were blazing—all forming the most effective of backgrounds for the graceful, if somewhat affected, work of the Rococo sculptor.

The art with which the vicinity of the basin is treated will be clearly appreciated from the picture and the fine contrasts of the snowy balustrades with the thick masses of foliage. The canal in the foreground leads diagonally for a short distance to the spring, whose great basin is bordered in a similar way so that its natural character is scarcely apparent. But all this is only a small part of the garden. To the left, if we stand as in the picture, behind the trees in the middle distance, is a broad triangular graveled space, thickly shaded by rows of Lindens, Horse-chestnuts and Planes, with Orange-trees between them in boxes gayly striped with yellow and green. Closer at hand the hill-sides rise all around us; they are low on our right, sheltering the Temple of Diana near the spring; on our left, beyond a broad open space and a strip of lawn, they rise almost perpendicularly as a wall of rock about fifty feet in height; and behind us they are again as high, and are backed in their turn by the steep and lofty hill called Mont Cavalier, on whose summit stands the ancient Tour Magne.

Here we begin to see how nature has been blended with art in this garden. The hill near the temple is covered with a seemingly natural growth of trees, chiefly Pines. Opposite, the perpendicular rock is clothed with the richest masses of free-growing vines and creepers. Great spiky Agaves and stiff Palms grow from the crevices and ledges through the mats of swaying foliage, making a delightful picture. Nothing could be finer than this cliff as a back for the diagonal perspective of avenues and balustrades, if the little lawn at its foot were not disfigured by an ugly statue of a local poet and by formal flower-beds of garish hue, perhaps the only note of bad taste to be found in the whole garden.

It would not have been well, however, to continue the naturalistic treatment adopted for the sides of this little amphitheatre across its back. Here something architectural was needed to carry on the scheme adopted in the centre, and, moreover, some dignified approach to the Mont Cavalier; so here we have a stately terraced stairway of marble rising to a broad balustraded upper terrace, from which we look over the whole lower garden, and again admire the vine-wreathed cliff, and see that its top (with which we are now on a level) is planted with forest-trees and laid out with winding walks.

So, too, is the whole steep, lofty side of the Mont Cavalier behind us. At the beginning of our century it was a burnt bare cone, its poor soil bearing only scattered tufts of grass and stunted shrubs. About 1820, thanks to the energy of the

*The historical facts in this sketch have been gathered from Monsieur L. Boucoiran's *Monographie de la Fontaine de Nimes*, published in 1859. As the motto of his little book he quotes these lines from Ausonius:

Divona Celtarum lingua fons addite divis
Non Aponus potu, vitrea non luce Nemausus
Purior.

mayor whose name the hill now bears, it was planted to the top, chiefly with Aleppo Pines, which are mingled with Cypresses and other trees, and near the paths a thick growth of shrubs. The walks are as thickly shaded as in a natural forest, and every now and then give us an enchanting glimpse of the lower gardens. About half way up they widen into a broad terrace-like path, running straight across the hill, and extending beyond the slope we have ascended, above a more precipitous slope, where a great retaining wall sustains it. Here one may pause to rest, to enjoy the beautiful prospect over the city.

Above this terrace the ascent is somewhat less steep and the paths straighter, and finally, when the relief has been well earned, we come out on a small, level, naked plateau, in the centre of which rises the famous Tour Magne.

This is a large and lofty ruined tower, evidently of Roman handiwork, which we can ascend for the sake of a magnificent panorama—Nimes on one side, and a vast, green, broken, village-dotted plain elsewhere, encircled by distant hills, whose yellow bareness, contrasted with the green lowlands, gives us the full beauty of color that characterizes the *Midi* in midsummer. Surely nowhere else does so impressive a monument, looking on so magnificent a scene, give the finishing charm—literally the crowning charm—to gardens so lovely and so varied. Hardly in its perfect estate could the tower have been more impressive than now, an almost shapeless yet splendid giant, golden yellow and gray in color, and fringed all over with little flowering plants, among which here and there a young wild Fig-tree has taken vigorous root in some larger crevice. The hill-top around it is bare and encircled with a wall over which one gets views almost as fine as from the top of the tower itself.

Turning away at last, descending the forest-clad slopes in the brilliant sunset light and coming to terrace after terrace, we pause again on the lowest to note once more the effect of Maréchal's Rococo garden. We may abuse the Louis Quinze period as we will from the point of view of that "high art" which means serious intellectual work with brush and chisel. But it was a truly artistic period none the less—with clear ideals of its own and great skill in expressing them; a period which created works of genuine and individual beauty, though this beauty meant grace and charm rather than nobility and power. Above all, it was a period of decorative art, and nowhere did it find a better field than in gardening. The sins of those who made this garden and "improved" the Roman baths were great, according to the conscience of our archæological times. But they produced a wonderful new work of art, while, had we such relics of antiquity to deal with, we should only produce an out-door museum of relics.

A point to be noted, as in contrast to our northern ideas of garden-making, is that all this beauty exists with scarcely any use of grass. There are no lawns save the one bit which runs beneath the perpendicular cliff. Even flowers, against which the climate does not protest as it does against grass, play no important rôle, except in the shape of flowering shrubs. But for the intrusive beds already referred to, there are flowers only in a few places between the avenues, where little rectangular beds lie, surrounded with Box edgings. Gravel, marble, shrubs and trees—these are the elements with which the designer has worked. Yet the trees are so many and so fine that, while they do not interfere with the effect of the architectural features, they cover most of the garden with a cool green roof, and its general aspect, even in midsummer, is deliciously umbrageous and refreshing. When the trees are bare in the short midwinter of this region, the wisdom of planting so many broad-leaved evergreen shrubs must be manifest. But summer is the time to see the south of France. Then, and then only, it is truly the *Midi;* truly the enchanting half-way station between the real north and the real tropical south, combining the beauties of both, and vexing us neither by the cold rains and dull skies of the one nor by the unbearable heat of the other.

## The Alleghanies of Virginia in June.

MOUNTAIN LAKE, the new name of the pretty little sheet of water which for nearly a century has been known by the herdsmen as Salt or Salting Pond, from the fact that they used to collect there to count and salt their cattle, is situated at the foot of Bald Knob, in Giles County, at an altitude of about 4,000 feet. The lake, as well as 100,000 acres of mountain and valley land around it, belongs to a gentleman in Washington, who also owns the comfortable hotel at its head. It is a mile long, closely surrounded by an almost impenetrable thicket of *Rhododendron maximum* and *Kalmia latifolia*, and overshadowed by a few tall old Hemlocks and by high rocky ridges, which are covered by a young growth of White Oak and Black Birch.

The Rhododendron and Kalmia make such a display as they only make in the southern Alleghanies, many of them approaching twenty feet in height. The Kalmia was in bud and just beginning to bloom when we reached Salt Pond Mountain on the 30th of May. Great beds of *Viola blanda*, *V. primulæfolia*, and *V. cucullata*, with its variety, grow down to the water's edge on the sloping meadow in front of the hotel. It is the home of Violets. Two yellow ones, *V. pubescens* and *V. hastata*, are in bloom in the woods near by; *V. rotundifolia* and *V. sagittata* are ripening their seeds on the shady hill-side, and *V. Canadensis* has followed us up the mountain, where, in a swamp by the road, it is nearly a foot tall, the flowers large and showy, all the pretty white petals showing a delicate lilac beneath. *V. pedata* grows along the path to Bald Knob, and up there, on the exposed south side of the ridge among stunted patches of Kalmia and Vaccinium, is the prettiest of all, the light blue and velvety purple *V. pedata*, var. *bicolor*, as large and much more showy than the typical plant growing near it.

Bald Knob is about 4,500 feet in altitude, the highest of the Alleghanies of Virginia, it is claimed, and from the summit five states are said to be in sight. The view is very beautiful. The great ranges of mountains, stretching north into West Virginia and south into North Carolina, are all densely wooded as well as most of the valleys, though there are many small, poorly tilled farms scattered among the mountains. Bald Knob is at the end of a long rocky ridge, and is one vast flower-garden. The old gray rocks are covered with *Saxifraga leucanthemifolia* in full bloom, and deep down in a cool crevice the tiny *Asplenium montanum* has found a firm foothold in every crevice. *Heuchera villosa* is there also, and side by side grow *Ilex monticola* and *Ribes rotundifolia*. Further down on the slope another Gooseberry, *Ribes Cynosbati*, is ripening its curious prickly fruit.

On the ridge opposite, just above the lake, the flame-colored Azalea (*Rhododendron calendulaceum*) flaunts its gorgeous flowers. They are of every shade, from light lemon-yellow to the most brilliant fire-red, and make a great contrast to the pretty, delicate rose-pink flowers of *Rhododendron nudiflorum* which grows amongst it. Both Azaleas and the Mountain Laurel are abundant through the woods. The true Lily-of-the-Valley, *Convallaria majalis*, is everywhere under our feet, its white bells larger and most fragrant, its beautiful glossy leaves taller and wider than those of the cultivated plants at home. Its companion among the rocks is *Anemone trifolia*, a much larger and coarser plant than the delicate little Windflower (*A. Nemorosa*) that grows in low swampy ground near New York. Both Clintonias are here, *C. umbellata*, with its snowy umbels and broad shining leaves, and the less showy, but equally pretty, *C. borealis*, with its graceful clusters of light greenish bells, which later on will turn into conspicuous umbels of bright blue berries; and, abundant all through the woods, with their heads well up, in tall, stiff groups, are the curious fragrant flowers of the smaller yellow Lady's Slipper (*Cypripedium parviflorum*). The stemless Lady's Slipper (*C. acaule*) is as plentiful up on the mountain as it is in the sandy woods of Massachusetts and New Jersey. *Sedum ternatum* makes great mats on the rocks in the woods and is still in bloom, and near the top of the slope we come upon a great patch of the Painted Cup (*Castilleia coccinea*), its scarlet flowers making brilliant patches of color through the low growth of young Birches.

*Trillium grandiflorum* is the most common of the mountain flowers, and well deserves its specific name, though it varies so greatly in size and color that it seems hardly possible that the one name can fit all its forms. It is white, pink and a deep magenta, some of the great petals three inches long, others again not larger than those of the pretty, delicate little Painted Trillium (*T. erythrocarpum*) that grows with it. The Blazing Star (*Chamælirium luteum*) is very conspicuous, its tall, graceful white spikes often six inches long and three-quarters of an inch thick.

One of the most interesting among the flowering shrubs is *Crataegus coccinea*. We find two specimens near the road, one in full bloom, the other in fruit. The great bunches of large white flowers are a relief from the brilliant coloring all around us.

Above all this gay wild garden are some picturesque old White Oaks, their young pinkish leaf-buds and small gray leaves as beautiful as the flowers which run riot at their feet. The wind that sweeps unhindered over the ridge has twisted their branches into all sorts of fantastic shapes, and

the old lichen-covered trunks gleam white and silvery through the thickets of bright-colored Azaleas all around them.

In a little rill near the hotel, the tall, rather ungainly Lettuce Saxifrage (*Saxifraga erosa*) grows in the water, and in the adjoining marshy ground are the conspicuous triangular bright blue flowers of the common Spiderwort (*Tradescantia Virginica*). *Parnassia asarifolia* was found on old logs in the lake, but it was too early for the flowers, as well as for those of *Trautvetteria palmata*, which, in company with the green-flowered *Veratrum viride*, fills the deep bog along Little Stony Creek, the outlet of Mountain Lake, with a coarse, rank growth.

*Magnolia acuminata* is still in bloom on the borders of this swamp, and fills the air with the delicious fragrance of its large cup-shaped flowers, and all through the surrounding woods we found the curious *Conopholis Americana* in all stages of flower and fruit. The Striped Maple (*Acer Pennsylvanicum*) is dropping its small pretty racemes, and at its foot, growing all along the top of a decayed mossy log, are the dainty white flowers of *Tiarella cordifolia*.

These great logs, principally Hemlocks, overgrown with Moss and Fern, are the remains of what must have been a magnificent forest, for enough of them are still standing to bear witness to their former grandeur. In this jungle we find our third Trillium, the stiff, dark reddish *T. erectum*, and that curious vine, *Aristolochia Sipho*, which twines over rock and shrub, the queer, though hardly pretty, brown flowers really looking like so many little pipes among the large roundish leaves.

Both *Menziesia globularis* and *Vaccinium erythrocarpon* grow along the road over which we drive to the Cascade, five miles away, when we leave Mountain Lake on our way to the New River Valley. The falls are charming and the beauty of the ravine well repaid us for the rough climb we had to reach it.

There on the high cliffs we again found *Asplenium montanum*, but this time with feathery fronds three inches long, and we gathered *Cornus alternifolia* almost in the spray of the cascade. Two more members of the Birthwort family, *Asarum Canadense* and *A. Virginicum*, grew there in the deep Hemlock woods.

*Gillenia trifoliata* is another graceful white-flowered plant that has a place in the flora of Salt Pond Mountain, and such snowy clusters of the Deerberry's (*Vaccinium stamineum*) delicate little bells are surely rarely seen. In the woods near the foot of the mountain we found a small group of the pretty blue Scullcaps, *Scutellaria saxatilis*, *S. serrata* and *S. nervosa*, all growing not far from each other. Among the roadside trees *Tilia heterophylla* and *Magnolia acuminata* are prominent with many Oaks, and here and there are large clumps of the long, dark green leaved *Æsculus flava*, the latter with swarms of bees around its fragrant spikes of yellowish blossoms. Some of the larger trees are dying by inches in the fields, for the way of making clearings down there is essentially a lazy one. The underbrush is burnt or cut out, grain is sown, the trees are girdled and left to fall when and where they will. How any harvesting is done in such fields is a mystery to the uninitiated.

Our twelve-mile drive over an unspeakably rough road in wagons guiltless of springs came to an end at Eggleston's Springs, on the New River, where in a rather comfortless inn we spent the night.

New York. *Anna M. Vail.*

## New or Little Known Plants.

### Schubertia grandiflora, Mart. and Zucc.

THIS species, which has recently been brought into notice in England, was first discovered by Martius some seventy years ago in the forests of eastern Brazil. A species much resembling this, but with rather smaller flowers (*S. græveolens*), has been occasionally cultivated for nearly fifty years, but has not received much attention. Like the very similar *Stephanotis floribunda*, it is a woody climber of the *Asclepias* family, with milky juice, and bearing umbels of large fleshy flowers in the axils. The leaves and branches are rather thickly covered with coarse brown hairs, and the bark upon the older stems becomes thick, white and corky. The flowers are pure white (becoming creamy) and extremely fragrant, and are very persistent, retaining their freshness for several days after being cut.

The plant is readily propagated either by seeds or cuttings, and is a rapid and vigorous grower, attaining a length of twenty or thirty feet in the course of a year, and continuing in profuse bloom for several months. It bears a dry fruit of the size and shape of a small pear, covered with scattered fleshy spines, and containing numerous plumed seeds like those of the Milkweed. The leaves have a somewhat fetid odor, especially when bruised, which is the only thing that detracts from its value for floral purposes.

The genus *Schubertia* has been united by Bentham and Hooker with *Physianthus* under the older name of *Araujia*, but continental botanists still keep it distinct, perhaps more correctly. It is very closely allied to the "Condurango" which some years ago had an artificial reputation as a remedy for cancer.

The plant from which the figure here given was made was raised from seed planted in the spring of 1889 by Mr. John N. Gerard, of Elizabeth, New Jersey, and is now in possession of Mr. John Thorpe, of Pearl River, New York. The vine is now twenty-one feet long, trained horizontally, and covers a space three feet wide. It is flowering profusely both on leaders and laterals, the number of trusses being about 160, with from five to nine flowers in each cluster. *S. W.*

## New Orchids.

TRICHOPILIA PUNCTATA, Rolfe, is an elegant little species, allied to *T. laxa*, but the segments spotted with reddish purple, an unusual character in the genus. It was introduced from Costa Rica by Messrs. F. Sander & Co.—*Gardeners' Chronicle*, February 22d, p. 227.

CYPRIPEDIUM × ŒNONE, Rolfe, is a hybrid raised by Messrs. F. Sander & Co., from *C. Hookeræ* fertilized with the pollen of *C. superbiens*. The leaves are much like the former species, while the flowers have more of the character of the latter. The only plant saved is now in the collection of Mr. R. H. Measures, of Streatham.—*Gardeners' Chronicle*, March 1st, p. 260.

XYLOBIUM COLLEYI, Rolfe. This is the old *Maxillaria Colleyi*, Lindl., described in 1838, and which has long been lost to cultivation. A plant sent from the Trinidad Botanic Garden to Kew proved on flowering to be this species. Its native country still remains doubtful. It bears short racemes of reddish brown flowers, which smell like cucumbers, but are of little beauty.—*Gardeners' Chronicle*, March 8th, p. 288.

DENDROBIUM × ASPASIA, Veitch, is a beautiful hybrid raised by Mr. Seden for Messrs. James Veitch & Sons, from *D. aureum*, fertilized with the pollen of *D. Wardianum*. It was awarded a first-class certificate by the Royal Horticultural Society on March 11th. It is the plant described in the *Gardeners' Chronicle* for April 20th, 1889, p. 490, as *D. Wardiano-aureum*. The lip is very richly colored.—*Gardeners' Chronicle*, March 15th, p. 336.

CYPRIPEDIUM × NUMA, Veitch. A hybrid raised in Messrs. James Veitch & Sons' establishment from *C. Lawrenceanum*, fertilized with the pollen of *C. Stonei*. It has much of the general character of the pollen parent. It was awarded a first-class certificate by the Royal Horticultural Society on March 11th.—*Gardeners' Chronicle*; March 15th, p. 336; May 17th, p. 608.

CYPRIPEDIUM × OTHELLO, Veitch. A hybrid exhibited by Messrs. James Veitch & Sons at the meeting of the Royal Horticultural Society on March 11th. Its parents are *C. hirsutissimum* and *C. Boxallii*. Thus it must stand very near *C.* × *Godseffianum*, which has the same or the reversed parentage. —*Gardeners' Chronicle*, March 15th, p. 336.

ZYGOPETALUM (§ BOLLEA) WHITEI, Rolfe, is a new species allied to *Z. hemixantha*, with cream-white flowers and a golden yellow disc. It is a native of New Granada, and was found growing with *Cattleya Mendeli*, by a collector of Mr. R. B. White, of Arddarrock. It is said to be a free grower, and the flowers are very pretty.—*Gardeners' Chronicle*, March 22d, p. 354.

ODONTOGLOSSUM WATTIANUM, Rolfe, is a very distinct form somewhat intermediate in character between *O. luteo-purpureum* and *O. Lindleyanum*, though whether it is a natural hybrid between them or a distinct species still remains doubtful. The flowers are yellow, blotched with maroon. It was introduced by Messrs. F. Sander & Co., of St. Albans.—*Gardeners' Chronicle*, March 22d, p. 354.

LÆLIA-CATTLEYA × HIPPOLYTA, Veitch, is a most beautiful hybrid raised from *Lælia cinnabarina*, fertilized with the pollen

Fig. 48.—Schubertia grandiflora.—See page 368.

of *Cattleya Mossiæ*. The color of the flower is a beautiful Indian yellow, much like that of *Lælia + flammea*. It was awarded a first-class certificate by the Royal Horticultural Society on March 26th.—*Gardeners' Chronicle*, March 29th, p. 398, and April 5th, p. 431.

DENDROBIUM MIRBELIANUM, Gandich., is a very interesting species from New Guinea, which has been known to science for upward of sixty years, and has now been introduced to cultivation by *L'Horticulture Internationale*, of Brussels. It is a robust species with long, erect racemes of yellowish green

flowers, with a few purple-brown spots on the segments and lines on the lip.—*Lindenia*, vol. v., p. 49, t. 215.

Masdevallia Lowii, Rolfe, is a pretty little species belonging to the Saccilabiate section, which was introduced from the Cauca, New Granada, by Messrs. Hugh Low & Co., of Clapton. It is readily distinguished from its allies by its shallow, maroon-purple lip, which is unusually fleshy and almost filled up with the keels so characteristic of this section of the genus. The sepals are also narrower than usual below, and gradually attenuated right to the apex.—*Gardeners' Chronicle*, April 5th, p. 416.

Kew. *R. A. Rolfe.*

## Plant Notes.

### Hypericum Kalmianum and Lobelia Kalmii.

THIS is the season of *Hypericum Kalmianum*, whose yellow blossoms seem more than usually profuse the present year. Large patches of them may be seen covering the ground along the borders of the sloughs throughout the sand region at the head of Lake Michigan, for it is under such conditions that it flourishes here. The excellent figure and description of it in Garden and Forest for March 5th leads me to send some account of this plant and another one named after Peter Kalm, both of which are common near the shores of Lake Michigan in the sandy region just south and east of Chicago. One gets the impression from the habitats assigned in most of the hand-books of botany, that they are quite exclusively denizens of the rocks; but they flourish equally well in the damp silicious sands. The first named will also bear a considerable amount of dryness. It is not confined to the lake shore, though abundant in many places on the landward side of the ridge of sand usually fringing the shore, and against which the surf may beat when the waves run high. It sometimes spreads two or three miles away from the shore, growing along the borders of sloughs and sluggish streams. It may be found in company with our only shrubby Potentilla, *P. fruticosa*, though the latter can endure wetter conditions of soil, the lower part of the stems being under water sometimes, but not, apparently, as a permanent state. Such shrubs as *Pyrus arbutifolia*, *Cornus paniculata* and *C. sericea*, and the Willows *Salix lucida*, *S. glaucophylla* and *S. adenophylla*, often accompany it. The last is quite peculiar to the shore, seldom getting away from it, and is generally found higher up the slope of the sand ridge or on its top. I have found *Hypericum Kalmianum* in the same situations as *H. Canadense* and *H. gymnanthum*. Other plants growing along with it are *Linum Virginianum*, and *L. sulcatum*, *Castilleia coccinea*, *Tofieldia glutinosa*, the beautiful Gentian, *Sabbatia angularis*, and the two pretty Orchids, *Pogonia ophioglossoides* and *Colopogon*—each, of course, in its season. This partial list, which might be considerably extended, will serve to show that it is not very exclusive in its habits, for some of the plants mentioned are usually regarded as wet or damp-ground and some as dry-ground species. And it may also in a measure explain why this Hypericum is so easily cultivated, as well as the other species of the genus, since they readily adapt themselves to varying conditions. I should think, however, that a light soil kept reasonably moist would be nearest to their natural state. Some years ago I came across a patch of this plant in one part of the city that was at the time under improvement as a park. It had evidently been brought by accident among the roots of a White Pine which had been planted near by. The ground was sandy and quite dry, but the shrub was strong and doing well. I may add that *H. Kalmianum* is quite commonly distributed along the sandy shores of Lake Michigan, probably throughout its whole extent. The place where I have seen it farthest from the lake was on the rocks at the sandy Portage of the Menominee River, in the northern peninsula of Michigan. This is a little below Iron Mountain, or about fifty miles up the river from Green Bay, into which the Menominee flows.

The other plant named for Peter Kalm, *Lobelia Kalmii*, probably gathered by him at Niagara Falls, where it grows upon the rocks, as I have taken it from the Three Sisters Islands, is also common here. It is not confined to the "wet limestones," but does just as well in the damp sands, and sometimes assumes neighborly relations to *L. spicata*, abundant here in open sandy ground. A similar list of mingled plants might be made out for this, as in the case of *H. Kalmianum*, though I find it a little more confined to the wetter ground. In fact, an extended article could be prepared from material furnished by the mixed character of the flora of the upper lakes, especially that near the south end of Lake Michigan, interesting to the botanist, meteorologist, and doubtless profitable to the horticulturist, showing how plants in their wild state readily adapt themselves to changed conditions, and I have often been surprised to find many strange neighbors among plants. In Michigan the habitats of plants differ widely from those set down in the books, especially when these wet, sandy grounds are drained as they come to be by the demand of the growing population of a large city. Having seen this go on for nearly a score of years, the opportunity has been very favorable to study this struggle for existence. While the original soil is left undisturbed by the plow or spade, the wet-ground and the dry-ground plants suit themselves to the altered surroundings, the latter coming in among the former, and as cosily occupying the same quarters as though they had never lived apart. Some are devoid of the requisite flexibility of constitution and yield to the inevitable, but many more soon come into permanent relations with a new environment.

Englewood, Ill. *E. J. Hill.*

## Cultural Department.

### Notes on Shrubs.

PROBABLY there is no species among the late flowering Spiræas in cultivation which would rank higher as showy ornamental shrubs than *Spiræa discolor* and its varieties. This species is a native of several of the states in the Rocky Mountain region, and it extends from southern California into British Columbia. Although long known it is seldom seen in gardens in this country; but, in the northern and New England states, this may be partly due to the fact that the plants generally do not withstand the severe winters without some artificial protection. *S. discolor*, var. *ariæfolia*, or, as it is more often called, *S. ariæfolia*, is very unequal in its behavior at the Arboretum. It has seldom flowered so well as it has this season, a circumstance partly due, no doubt, to the past mild winter, and to the stems having been bent over and carefully, though lightly, covered with soil.

The tallest stems have attained a height of eight or nine feet, and all have been well laden with numerous large, loose spreading panicles of creamy white or straw colored flowers. The panicles bear some resemblance to those of the common Siberian *S. sorbifolia* of our gardens, but they are not so large and have a more feathery and less stiff and formal appearance. Besides this, they differ in being produced on a number of lateral branches along the main stems, whereas the panicles on *S. sorbifolia* are erect, solitary and terminal.

The two species bear no resemblance to each other in habit or in general appearance, and if it was perfectly hardy *S. ariæfolia* would be considered the most valuable, both for its blossoms, and because it may be very easily kept as a neat, trim bush, and does not spread and encumber the ground by suckers.

Under cultivation at the Arboretum the panicles of flowers average about six inches in length by four inches across, but some are nine or ten inches long, with a diameter of from six to eight inches. The individual blossoms are small, about a fifth of an inch across, and they are light creamy white in color. The odor has been described as like that of Sweet Birch, yet to many people it is more strongly suggestive of honey. There is also a suggestion of the odor of Chestnut-blossoms, which lends a slightly disagreeable quality.

In its native habitat the shrub is said to grow from five to fifteen feet high. In well sheltered situations in southern New England it would probably rarely fail to blossom abundantly, and some hardier strains than that grown at the Arboretum may yet be procured. The flowers are of short duration, but, as all the panicles do not develop their blossoms simultaneously and some plants are a little later than others, a good show of bloom is kept up for three weeks after the opening of the earliest blossoms—about the 1st of July.

*Spiræa Millefolium*, which was figured on p. 509 of the second volume of Garden and Forest, blossoms at the same time as, or a little later than, the last species, and although more interesting in many ways it has little merit as a conspicuous or decorative shrub. The specimens in the Arboretum were produced from seed collected in Nevada and they have proved very hardy without any protection. They are, however, of straggling habit, though upright, and only three or four feet in height. The foliage is not sufficiently abundant to hide the naked lower portions of the branches and stems. The narrow, finely twice-pinnate leaves distinguish this species from all others of the genus. Another peculiarity of the leaves is that a very well developed tuft of them remains on the tip of each branch throughout the winter, and these leaves continue their growth with the new shoots in the spring.

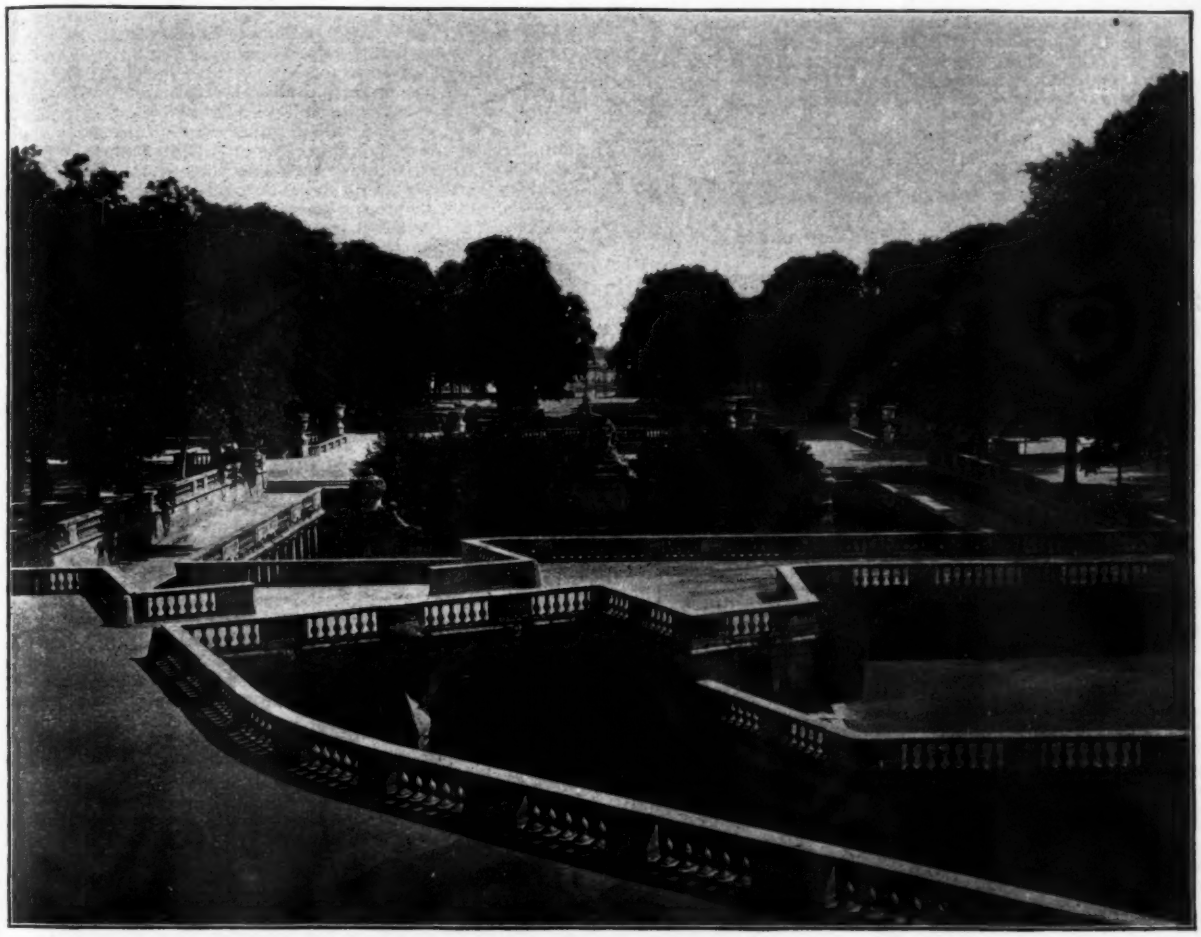
The panicles of flowers are not produced in much profusion. They are from two or three to four or five inches long, and are borne on the extremities of a few of the strongest shoots. The petals are of a rather pale white color and the expanded flowers are nearly half an inch across. But as not one-half of the blossoms in a panicle are open at any one time they are not so showy as they otherwise might be. The fragrance of the flowers reminds one of the odor of the common Yarrow, though the latter is much less powerful, while that of the leaves and whole plant has been likened to creosote and also suggests burning sealing-wax.

This species and *S. discolor* have so many characters peculiar to themselves that some systematists place them in separate genera as being quite distinct from the true Spiræas.

In *Spiræa Douglasii*, another species from the western part of the continent, we have a plant which nearly corresponds to our Hardhack or Steeple-bush (*S. tomentosa*). Except for the slightly larger size of the panicles of its flowers, which may also sometimes be a little deeper in color, *S. Douglasii* possesses few qualities to make it of any more ornamental value. The plant is of larger, coarser growth, and the leaves are also larger but not so neat and attractive as those of the common Hardhack, which also bears neater, much more pointed and more symmetrical panicles of flowers.

The variety of *S. Douglasii* known in nurseries as *S. Nobleana* chiefly differs from the typical species in having the flowers arranged in panicles which are broad and spreading instead of narrow and pyramidal. The very short duration of the flowers and the fact that those on the upper portion of the panicles usually become an ugly brown sooner than the lower or outer blossoms is a serious drawback to the beauty of these and some other deep pink or rosy purple flowered species. The well known Japanese *Spiræa callosa* and many of its forms come under this class, but they are valuable because they keep up a succession of blossoms for several weeks.

Arnold Arboretum. *J. G. J.*



Roman Baths, Gardens of the Fountain, Nimes.—See page 366.

## Notes on American Plants.

WE have in New England three native Sundews (Drosera) which flower about this season. They are all small species, generally classed among the carnivorous plants, and this curious characteristic is one of their chief points of interest. Yet the largest of these, the Thread-leaved Sundew (*Drosera filiformis*), has numerous handsome rose-purple flowers half an inch wide in a one-sided spike. It is seldom more than a foot high. The very long, thread-like leaves are covered with their glandular bristles, and the sticky gluten which exudes from them catches many an unfortunate insect that comes within reach of it. In fact, the leaves are often almost hidden by its little victims. This species has been found near the coast at Plymouth, Massachusetts, and thence southward to New Jersey and Florida.

Our most common species, the Round-leaved Sundew (*D. rotundifolia*), is a more delicate little plant, with round leaves on spreading petioles which lie quite near the ground. The flower-stem is seldom more than eight inches high, bearing several small white flowers. It is very common in peat-bogs and wet sandy places throughout New England.

The Long-leaved Sundew, formerly called *D. longifolia*, but now known to botanists as *D. intermedia*, var. *Americana*, is not so common, but grows in bogs, in wetter places, and might almost be called an aquatic. In its general appearance it much resembles the preceding, and it has similar white

flowers. All of these Sundews are easy to grow, but the first, when brought from as far south as Florida or Georgia, might not endure our cold winters without protection. They thrive well in a wet sandy soil with the Venus' Fly-trap and such Sarracenias as are found in sandy bogs.

The common Floating Heart (*Limnanthemum lacunosum*) is a valuable little aquatic, and is especially adapted for small aquaria. Its round, heart-shaped leaves, usually a little more than an inch long at this season, are of a reddish purple shade and variegated with a greenish centre. The several small white flowers are a third or half an inch wide on thread-like petioles, which come from about an inch below the leaf. They succeed each other in long succession, and, like the leaves, float on the surface of the water. It is a native of shallow ponds from Canada to Florida.

The value of our native white Water Lilies for cool waters cannot be too highly estimated. The sweet-scented one, *Nymphæa odorata*, is already too generally known to need any mention. Its variety, Minor, with smaller leaves and flowers, is also a desirable plant, and may be grown with it in similar situations. The largest of our Water Lilies, *N. tuberosa*, is not so generally known. It is a larger and stronger plant, and when given an equal chance bears larger and handsomer flowers—nearly a third larger than *N. odorata*. The leaf is also a third larger, not rarely fifteen inches wide. The flower, though not so strongly scented as the other, has a delicate and delicious odor peculiar to itself, and it remains open later in the day after those of *N. odorata* have closed. Both sides of the leaves of *N. tuberosa* are green, while in all the plants of *N. odorata* I have seen the under side of its leaves were of a reddish purple color. The pinkish color of the sepals, so common in *N. odorata*, is said to be always lacking in *N. tuberosa*, and the small tubers, which are so numerous in *N. tuberosa*, attached to the main root-stalk, are lacking in the other.

There are other handsome species native to North America, such as the *N. flava* of the southern states, with yellow flowers, the beautiful blue flowered *N. elegans* from southern Texas and Mexico, and the *N. ampla* and *N. gracilis*, but none of these thrive in our cool, clear waters of New England. Even in the hottest summer weather, such as the present season affords, they only manage to exist, sending up a few weak leaves with no promise of flowers.

One of the most attractive little plants of the Heath family, and which is now in flower, is the Spotted Wintergreen (*Chimaphylla maculata*). The plant is seldom over six or seven inches high, and bears four or five nodding, white, deliciously fragrant flowers, three-fourths of an inch wide. The ovate-lanceolate leaves are dark green, variegated with a lighter centre along the middle the whole length of the leaf. It is a difficult species to transplant, and the only way is to take up large sods and set in a fine shaded soil.

The White Fringed Orchis (*Habenaria blephariglottis*) is just beginning to bloom. It is one of the rarest and most desirable species we have. It grows in bogs and on borders of ponds, usually only a foot high, with oblong-lanceolate leaves, and at the summit a short, round spike of pure white flowers. It is a good plant for artificial bogs, and blooms a little before *Habenaria psycodes*, when flowers are few.

*Aletris farinosa* (Star Grass) has its leaves in a cluster close to the ground, from among which comes a long, slender, naked scape, two or three feet high, bearing a wand-like raceme of pretty white flowers. The spike or raceme is about three-fourths of an inch in diameter and five to eight inches long. It is useful for cutting. The plant is not rare, and may be easily grown in the sun or shade in a sandy soil.

*Silene stellata*, Starry Campion, sometimes called Colic Root, is an attractive plant when in bloom. Its numerous flowers are three-fourths of an inch across and pure white. The petals are cut into a fringe, which adds to its beauty. The stems are two or three feet high and rather weak at time of flowering, for the stalks with flowers are usually bent down. The taper pointed, narrowly ovate leaves are in whorls of four at considerable distances apart along the stem. It is a native of wooded banks from Rhode Island to Wisconsin and southward. Although it grows in shade or partly shaded situations it seems to thrive equally well in the sun.

The Bristly Sarsaparilla or Wild Elder (*Aralia hispida*) is not a showy plant. The stems, which are a foot or two high, are bristly, with a moderate amount of foliage, and terminate in a head bearing several hemispherical umbels of greenish white flowers. Its best season is when in fruit and it bears an abundance of dark berries much resembling those of the common Elder. It grows in rocky places, also on dry sandy soil, and does fairly well in either sun or shade.

Southwick, Mass. *F. H. Horsford.*

## Cinerarias.

CINERARIAS are among the most useful and showy plants for the embellishment of the conservatory and greenhouse during the winter and spring months. They are easily managed, too, but are seen much more rarely than they deserve, and still more rarely grown up to the recognized standard of a florist's flower. One great drawback to the successful cultivation of Cinerarias in the United States is that growers follow the cultural notes given in European periodicals and catalogues. Rules which ensure success in England would bring disaster if strictly adhered to in this country, and yet these plants can be grown successfully by every one who can command an ordinary garden frame and a greenhouse from which frosts and excessive damp can be excluded.

Cinerarias are classed as greenhouse perennials, and many varieties are grown as such in Europe and propagated by offshoots after flowering; but the difficulty here is that the plants cannot survive our summer sun and heat. This fact must also be borne in mind by those who treat them as annuals. Plants from seed sown in May and June lack the vigor of later sown seedlings, and this is a vital point in cultivation. Seed of an extra good strain should be obtained from a reliable source, and two sowings made; the first from the middle to the latter end of July, with another about three weeks later. The seed should be sown in pans or shallow boxes upon light sandy soil, moist, but not wet, and they should be covered lightly with finely sifted soil. A cold-frame, pitched north, with sashes shaded and a bed of coal ashes two or three inches thick, makes a good place for seed-pans, as well as for the seedlings in all stages of growth, if no other suitable structure can be commanded. The seed-pans should be covered with glass or paper to prevent evaporation during the day, but the glass must be taken off for some time daily, as the close atmosphere will help the development of bench-fungus, which will destroy the seedlings before they can be safely handled. I prefer to cover the pans during the day and leave them uncovered at night. In watering seed-pans a fine rose watering-pot or a rubber sprinkler should be used. When the seedlings are large enough to handle, prick them off into shallow boxes and return them to the frame, where they should be constantly, but discreetly, ventilated. Newly pricked off or potted plants must be kept somewhat close for two or three days after shifting or the plants may flag, a result to be avoided always; and yet the night air is beneficial. Keep a sharp look out for slugs and snails, as the tender seedling is a tempting morsel, and if one slug can reach a plant at this stage it is gone. Young toads also like to bury themselves in the cool sandy seed-boxes, not to the benefit of the plants.

As soon as the plants are large enough, and before they get crowded in the boxes, pot them off singly into three-inch or three-and-a-half-inch pots, using well decayed sod and rotted cow-manure or manure from a spent hot-bed. The soil should be rubbed through a sieve of half-inch mesh with sharp sand, broken charcoal or coal ashes to keep it porous. The pots must be clean and well crocked for drainage. Care must be taken in handling the young plants from the seed-pans that a leaf is not broken or the tender roots bruised by pressing the soil too firmly into the pots. The plants may be lifted with a stout label with as much soil as will adhere to the roots, and should not be planted too deeply or they may rot off. As soon as the plants have partly filled the pots with roots they should be shifted into five-inch and six-inch pots. In the latter size they may be left to bloom, but those in the smaller pots will need another shift. Use the same soil as at first potting; give a light sprinkle of bone-meal and place the pots once more in the cold-frame, giving attention to shading, watering and ventilation.

As the plants advance in growth those in five-inch pots may be shifted into pots two or three sizes larger, using the same compost as before; those in six-inch pots should receive weak liquid manure once a week, and the application should be increased in strength and frequency as the plants require watering, until every second watering is with liquid manure. Give each plant abundant room for developing its foliage, and use every possible means to keep the foliage clean, healthy and vigorous. During hot and dry weather a light sprinkling overhead will greatly assist them. As autumn approaches every precaution must be taken against frost, but the plants should not be hurried into the greenhouse, for mild weather is often experienced after a light frost or two.

The Cineraria dislikes sun heat and fire heat and extremes of temperature, and when it is necessary to bring the plants into the greenhouse place them in the cool house, giving air on all favorable occasions, but guarding against cutting draughts of cold air, a glaring sun and a dry atmosphere. A

mean temperature of forty-five degrees should be maintained, and, if kept cool, Cinerarias are seldom troubled with insects. In heated structures they soon become infested with green fly. A mild fumigation with Tobacco-stems should be given weekly as a preventive, for if green fly is not kept off the plants the flowers will not be worth seeing. The plants should be kept growing steadily and rapidly from the seed until they flower. This is essential, and therefore they should be kept clean and healthy, and should never be allowed to become dry, starved or pot-bound.

Staten Island. *W. T.*

## The Vegetable Garden.

EACH year's experience with the little Bush Lima Bean sent out last year by Peter Henderson & Co. confirms my first impression of its great value; and I had an opportunity to observe it before its dissemination. This Bush Lima is a variety of the Small Lima Bean, and it originated in Campbell County, Virginia. Its small size was a disappointment to many who bought it for the first time, but its earliness, remarkable productiveness and good quality will atone for this. It is a well known fact in the south that the old large Lima is very unproductive anywhere south of the Potomac, and the small Lima, known south as the "Butter Bean," has always been a favorite sort here. The Small Bush Lima ought to be a favorite in the north, on account of its earliness, which prolongs the season for this delicious vegetable. Here in Raleigh we can have the Bush Lima in abundance by the middle of June, nearly a month earlier than the large pole Lima is ready, and the same difference will probably hold good at the north. This season a pint of these beans planted in my garden has given an abundant daily supply to a family of twelve persons since the middle of June, and as I write (July 19th) there is no let up in the blooming and pod-making. I believe now, though disposed to doubt it at first, that a larger yield per acre can be had from the bush than from the pole bean of the same species. This will be accurately tested at the Experiment Station here next year.

Flat Strap Leaf Turnips for family use should not be sown too early. These Turnips, when in perfection, which is only in autumn, are the sweetest and best for table use. They should, however, be grown almost as rapidly as radishes to be good. If sown too early in highly enriched soil they grow large and pithy and are not so sweet. The middle of August at the north is early enough, and a month or more later in this latitude is better. The seed should not be sown broadcast. We usually open furrows with a plow, when they are grown on a large scale, about two and a half feet apart. In these furrows a heavy dressing of superphosphate is sown and a light furrow turned from each side over the first one, forming a sharp ridge. A roller is then run over the ridges lengthwise, flattening them nearly to the soil level. The seeds are then sown with a drill on the flattened ridges, and over the fertilizer.

The black flea beetle (Haltica) attacks them as soon as they germinate, but a dusting of air-slaked lime will usually expel them. If the lime alone is not sufficient, use a very small portion of Paris green, say one-half of one per cent. of the whole.

The Chinese Rose Colored Winter Radish can also be sown in the same way and at about the same time, or, better, a little later. In this latitude these are best when sown the last of September, and a second sowing can be made later still if the first ones promise to be too large. We leave them to stand where they grow for winter use protected only by the Chickweed, which here mats over every fertile spot in winter. Even in the north I think they might be left where they grow and covered with a heavy coat of straw or forest-leaves. They keep well in moist sand in a cool cellar.

The earthing-up of Celery should not be begun too early, except of a little for fall use. Celery earthed and blanched in hot weather is not usually a good article. Whenever the winters are not too cold the bed system practiced around Baltimore is best. These beds are six feet wide by any length, and the plants are set in rows across the bed a foot apart and six inches in the rows. The whole bed is earthed up en masse and finally covered with forest-leaves, and the plants are allowed to stand where they grow. Celery grown in these beds has a crispness which is not found in Celery that is lifted for storing in winter. Even at the north Celery could be kept if a rough board roof were thrown over the banked base and then covered with straw to exclude the frost.

The dwarf Celeries are best at the north, but south of the Potomac the half dwarf and the old large sorts are the best. In this latitude our chief difficulty is to get it to stop growing. Last winter being unusually mild, our Celery nearly all ran up to bloom and seed in midwinter.

The practice of growing a late fall crop of Irish Potatoes, I believe, is destined to extend not only in the south, but a good deal further north than the experiment has hitherto been made. Years ago, even in the south, a late crop of Irish Potatoes was a very uncertain matter. But we have learned how to grow them here with certainty, and by the use of southern prepared seed Potatoes the planting could be extended with profit northward. The best practice here is to take Potatoes of the early crop and spread them out in a light shed until well greened by the light. These are then bedded on a piece of mellow ground in beds of any convenient width about the middle of July, the Potatoes being laid just so as not to touch each other. The bed is then covered with two or three inches of soil, and left until planting time, which is here from the middle to the last of August. By this time all the immature potatoes will have rotted or dried up, and the good ones will be well sprouted. These are then planted in shallow furrows, without cutting, and covered with not more than two inches of soil above the potato. The earth is packed to them with a roller, and in the after culture more soil is drawn to them. Growers in the latitude of Philadelphia, by taking these southern grown potatoes and planting in the middle of July, could, I feel sure, raise a fine crop. They should plant the seed potatoes much more thickly, to allow for the rotting, which we do in the beds. The chief point to observe is to cover these late planted potatoes very lightly. Deep planting at this season will always give a bad stand. Southern potatoes, well greened, could be shipped at low rates, since the cuttings of the early crop are the ones generally used.

Agricultural Experiment Station, Raleigh, N. C. *W. F. Massey.*

## The Dewberry.

IN the issue of GARDEN AND FOREST for July 9th Mr. Jack writes: "In a wild state the fruit (of the Dewberry) is very variable in size and flavor, but by selection and under cultivation it is possible to produce berries which, for size and flavor, cannot be distinguished from some of the best blackberries."

One would infer from this paragraph that the dewberry at its best is equal in point of size and quality to the best blackberries, a statement which does scant justice to the delicious, melting juiciness of the dewberry. To my own taste this fruit is surpassed in quality by the strawberry alone.

Except in form and color the dewberry differs nearly as much from the blackberry as from the raspberry. Its time of maturity is between the two, being at its best just as the raspberries are failing and before the blackberry-season has really commenced.

The Dewberry does not succeed well in all localities. In my first trials, which were with Bartell's and the Mammoth varieties at Geneva, New York, the plants were quite unproductive, and the fruits filled out very poorly. In the summer of 1889, however, I saw a plantation of Bartell's Dewberry on the farm of Hon. H. C. Adams, of Madison, Wisconsin, that convinced me in a moment that there is a future for this fruit. The vines were well loaded with the beautiful, glossy berries, many of which were nearly or quite two inches in length, and by the side of them the finest blackberries appeared commonplace indeed. And they were superior in taste as well as in appearance. Mr. Adams told me that he had no difficulty in securing several cents more per quart for them than for blackberries.

There is certainly a promising field for work in the improvement of the Dewberry. Seedlings of it may be grown with the greatest ease, and require but a short time to come into bearing. The difficulties of cultivating this fruit are little greater than in the case of the Strawberry. The fact that the stems are trailing is an advantage in cold climates, as they are the more easily protected in winter and are more likely to be sheltered by snow. One grower mentioned the fact that the vines of the Dewberry form a natural hiding-place for serpents, and in localities where these abound he has found difficulty in inducing timid pickers to gather the crop.

University of Wisconsin, Madison. *E. S. Goff.*

**Erpetion reniforme.**—This pretty little Australian Violet will not prove hardy in the colder states, but any one who has the protection of a greenhouse to give it in winter will be delighted with the abundance of modest little blue and white flowers all through spring and summer. Our plants were raised from seed sown in October last, and kept in the greenhouse all winter, where they commenced to flower in April. The plants form numerous creeping stems, from which come a dense mass of small green leaves, and flowers on stems about two inches high. These latter resemble other Violets, except

that the inner half of each division of the flower is blue and the other half white, giving them a distinct beauty of their own. *Erpetion reniforme* is the name usually given the plant in seed lists, though there are several synonyms, the most common of which is *Viola hederacea*. This plant would be desirable for carpeting the flower border in summer, but owing to its delicate habit it should not be set among coarse-growing plants or in dry places, and for growing in pans it cannot be over-praised.

**Californian Lilies.**—So far as I have tried these lovely Lilies, in all sorts of soil, in sun and shade, in open ground and in frame, *L. Washingtonianum*, *L. Humboldtii*, *L. Columbianum*, *L. rubescens*, *L. parvum* and *L. maritimum* have all been most unsatisfactory garden plants. There must be some conditions necessary to their successful culture that are yet insufficiently known, and I am tempted to ask if any readers of Garden and Forest have been able to succeed with these beautiful western Lilies for any length of time. *L. pardalinum*, when not affected with disease, grows here in Massachusetts often five feet high, with a beautiful display of its spotted flowers. That this Lily should do so well, and the other kinds so indifferently, requires a little explanation from those who are familiar with the plants and their natural surroundings.

South Lancaster, Mass. *E. O. Orpet.*

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**Nymphæa rosacea** is another of Monsieur Marliac's introductions well worth growing. It is apparently a variety of *N. odorata*, which it resembles in habit and foliage. The flowers are a light, clear rose or pink, in form and size like the type. Compared with *N. odorata rosea* (the Cape Cod Lily) the color is much more delicate and less decided. *N. rosacea* will prove a charming addition to any collection.

**Nymphæa pygmæa alba** (*tetragona*), the smallest of the Water Lilies, is a native of western China and Siberia. Owing to its diminutive size it may be grown in very limited space, the leaves being only three to four inches in diameter. The flowers are plentiful, white, about two inches in diameter, and of rather thin texture. Grown with other Nymphæas, in shallow water, they add variety, and their appearance is all the more dainty among the more robust growers.

Elizabeth, N. J. *G.*

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# The Forest.

## The Sihlwald.—I.

IT was my good fortune recently to pass a month in the Sihlwald, as that portion of the forest-property of the City of Zurich is called, which stretches for some five miles along the narrow valley of the Sihl. It is not often that a forest is so favorably situated both geographically, and as to the conditions which determine the value and fertility of timber-lands; and while there are many peculiarities in its management which mark it as distinct from the great body of European forests, it exhibits so full a knowledge of forestry applied to such excellent conditions and so admirable an adaptation of means to ends, that if it fails of being typical of that which is, it may assuredly challenge attention as the illustration of that which ought to be. Further, since during the last fiscal year it yielded to the city a net revenue of more than eight dollars per acre, a short account of it may serve to emphasize the fact, so often lost sight of, that the protection of forests is not an end, but a means, and that the whole question of forestry has a very definite and important financial bearing. It has, therefore, seemed that a few words upon the Sihlwald might not be without interest to the readers of Garden and Forest, and I purpose, after describing it briefly in the present paper, and sketching the management of the forest in a second, to touch upon it in a final one as a piece of municipal property.

Situated about two miles inland from the western shore of the Lake of Zurich, and within an hour's drive from the city, the Sihlwald lies along, and for some distance fills, the valley of the Sihl. The stream from which the forest takes its name was once a dangerous torrent, but in the progress of the work on the more rapid water-courses, which has already cost the Federal Government eight million dollars and the canton of Zurich rather more than eight dollars per head of its inhabitants, it has been "corrected" into harmlessness. Walled in along a large proportion of its course, and with its drainage area protected by forests and the heavy turf of the Swiss pastures, it has abandoned its aggressive character to become the centre of the industry and prosperity of the valley which it waters. The soil of the valley has for its geological base a marly sandstone, overlaid, on the broad plateaus which break the moderate slope of the left bank, by a sandy clay of glacial origin, deep, rich, and with great capacity for holding water. The opposite slope, much steeper, and, in consequence of its south-western aspect, more directly exposed to the action of the sun, is drier and less fertile. But since the whole valley of the Sihl, or at least that part of it which here concerns us, lying as it does between altitudes of 1,624 and 2,986 feet, enjoys an annual rainfall of fifty inches, it would be a mistake to speak of the right bank as dry and infertile, except in comparison with its richer neighbor. Both slopes are intersected by numerous small ravines, from which no fewer than forty rivulets find their way to the Sihl. But with the climate of northern Europe indicated by a mean temperature of forty-eight degrees Fahrenheit, and with the conditions of soil and moisture which have been mentioned, the exceptional productiveness of the Sihlwald would still remain partly unexplained, were it not possible to add that the land which it covers has been uninterruptedly under forest for something over a thousand years. That precious condition of the surface which the French and Germans unite in describing as "forest-soil," so slow in forming and so quick to disappear wherever the full sunlight is allowed to reach the ground, has here been produced in perfection by centuries of forest-growth. It is perhaps to this factor, next to the abundance of humidity, that the high annual yield of wood in the Sihlwald is due.

The growth which covers the soil thus fortunately suited to its needs is a mixed high or seedling forest, in which the deciduous trees largely predominate. Under the law of the rotation of forest-crops, not so well known as that which determines an analogous success in agriculture because it acts over vastly longer periods, the character of the mixture has undergone a gradual change, until, in the course of two centuries and a half, the percentage of coniferous trees has declined from sixty-one to fourteen, and the deciduous forest has taken their place. The composition of this last on a typical area of the Sihlwald may be taken to include eighty Beeches, ten Ashes, nine Maples and one Elm in every hundred trees. No exact data are available for the sixteen conifers which should theoretically find their place among these hundred broad-leaved trees, and it can only be said that they would stand thus: Spruce, Silver Fir, Scotch Pine and Larch, in the order of numerical importance. But it is to be remarked that the distribution of the different species is very far from being as regular as this statement would imply. While the mixture is in general rather one of individuals than of groups, still the various trees form each a larger proportion of the forest in those localities which best meet their requirements. Thus conifers replace the deciduous forest upon the dry slopes and sunny exposures of the right bank of the Sihl, and even considerable bodies of pure Spruce are to be met with. Nor does the Sihlwald, in spite of its large annual yield, convey the impression of a dense forest. The trees, cut soon after the period of maximum mean annual growth, commonly exceed a hundred feet in height at the time of felling, but so slender are they that it is rare to find a specimen of a greater diameter than two feet at twice that distance from the ground. The leaf-canopy, lifted on the straight, clean boles far above the beautifully kept paths, which it has been the policy of the Forstmeister to maintain, has none of the gloomy effect which a lower cover frequently produces; and the absence of underbrush and fallen branches gives a feeling of space and cultivation which is pleasant in the extreme.

Scattered along between this forest and the Sihl, are the houses of Forestmaster (Forstmeister) Meister and his assistants. Here, too, are placed the saw-mill, handle factory and injection plant, whose presence as integral parts of the equipment of the forest, chiefly distinguishes the management of the Sihlwald from that of other similarly situated European woodlands.

Nancy, France. *Gifford Pinchot.*

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# Correspondence.

## Experiments in Producing Rain.

To the Editor of Garden and Forest:

Sir.—"In certain villages in the Indian Central Provinces, besides the village blacksmith, the village accountant, the village watchman and the like, there is an official termed the Gapogari, whose duty it is to make rain. So long as the seasons are good and the rain comes in due time his office is, no doubt, a pleasant and lucrative one. It is not laborious, and it is obviously the interest of all to keep him in good humor. But if, as sometimes happens, the hot dry weather of April and May is prolonged through June and July, and week after week the farmer sees his young sprouting crops withering beneath the pitiless hot winds, public feeling is wont to be roused against the peccant rain-maker, and he is led forth and

periodically beaten until he mends his ways and brings down the much-needed showers."

This quotation from Blanford, the meteorologist, is used by a correspondent of the *Evening Post* to introduce the statement that the official position of Gapogari is to be established in this country. At least this may be inferred from an amendment by the Senate made in the appropriations for the Department of Agriculture.

Whether the methods of imposing the fine for non-performance are to be the same as in India I cannot surmise, but for the sake of the unfortunate official who is charged with the production of rainfall let us hope they are not. This much difference, at least, appears to be made, that the methods of producing rainfall are to be found by experiment, and not to be left to be a secret of the unreliable Gapogari.

There is in the appropriations for the Forestry Division a provision calling "for experiments in the production of rainfall," for which the vast sum of $2,000 is set aside. One is inclined to think, at the first look, that this was inserted by some one desirous of breaking up the modest beginning of Government forestry interests by demanding proof positive and on the spot that forest and rain-fall have a relation to each other, but inquiry develops the fact that this is a bona fide proposition, and the experiments are expected to be made. Forestry has really nothing to do with it, for it is dynamite, guns, electricity or what not, that is to serve in the solving of the problem.

Senator Farwell, of Chicago, is referred to as the originator of this remarkable proposition, and he may have a special interest in the experiment. He is one of a syndicate who built the Texas state capitol, one of the finest and most substantial architectural works in this country. In payment, the state ceded to the syndicate 3,000,000 acres of land in the so-called Pan Handle, a region which for a large part is devoid of living water (except where the Canadian River traverses it), and which suffers also from deficient rainfall. Rain would make it bloom, for it is very fertile soil. Hence a Gapogari might prove a desirable officer in the Pan Handle.

If Mr. Fernow, the Chief of the Forestry Division, whose unfortunate task it will be to explode the clouds (or is he to furnish clouds, too, for $2,000?) will be the most famous man of this century, if he succeeds in filling the position satisfactorily, and will not need to drudge at making forestry acceptable to the nation.

When asked about the matter he did not express himself very hopeful of success, and while admitting that the subject was not altogether devoid of legitimate inquiry, he did not think that our knowledge of physical forces and meteorological phenomena was as yet equal to the task, and he felt an unwillingness to try experiments without having investigated the basis for them. He said that the idea of producing rainfall artificially had been ventilated for a long time, and the hopeful expectation of solving the problem had been encouraged by the observation that cannonades on battle-fields or at celebrations (fireworks on a large scale), prairie fires or other extensive conflagrations were apt to produce precipitation for reasons well understood. But the application of this experience for practical purposes seemed questionable, especially in such parts of the country where there is no moisture to precipitate. An honest effort, however, will be made to arrive at least at a possible basis for such experiments, and to spend the money which, it was evident, the Chief of the Forestry Division would have preferred to use on the legitimate field of his division.

Washington, D. C. *M. C.*

## The Crandall Currant.

To the Editor of GARDEN AND FOREST:

Sir.—A late number of GARDEN AND FOREST contained some notice of this Currant in connection with the remarks upon new fruits by Mr. H. E. Van Deman, Pomologist of the United States Department of Agriculture. At the meeting of the nurserymen in New York in June, Mr. Van Deman spoke favorably of the Crandall as a new variety of Black Currant, of large size, with less of the strong odor peculiar to its class, and consequently better flavored. The most important fact, however, was brought out by Professor L. H. Bailey, of Ithaca, New York, which was that there was no one distinct variety that could properly be named Crandall, as the plants sent him were evidently a lot of mixed seedlings diverse in character, some bearing large and others quite small berries. It was stated that Mr. Crandall had grown a quantity of seedlings from the Missouri Currant, and that parties had obtained and propagated from a lot of these mixed seedlings plants to which they gave the name "Crandall," instead of selecting, as they should have done, a single plant, and propagating stock from it for a new and fixed variety.

The Crandall, as described and illustrated by those offering it for sale, has very large berries, and is represented as remarkably productive. Its peculiarities seem to be small and scanty foliage, with many small clusters, with three to five or six berries to the stem. Samples sent me, for testing, from the introducer, indicated that Professor Bailey was probably correct as to their mixed character, as their average was scarcely up to that of the Black Naples. There were a few quite large berries, many medium, and more very small. Raw or uncooked they had no attraction for me, and when stewed with fine sugar none of my family cared to eat them. Their introducer claims that they are excellent made into pies; but I should not place them high in the scale for any purpose, as compared with raspberries, blackberries, or even with other currants. It is but fair, however, to say that I am not very partial to Black Currants; and unless the character of the Crandall can be improved and fixed, by growing it from a single selected specimen plant, I certainly should not regard it as worthy of introduction. In its present condition I think Mr. Van Deman was inclined to commend it above its merits.

Delaware, Ohio. *George W. Campbell.*

## The Utah Black Currant.

To the Editor of GARDEN AND FOREST:

Sir.—You inquire (page 352) whether this is still under cultivation? You will find it in every edition of our catalogue for the past twenty or twenty-five years, and we suppose plants must be growing all over the Union. It is now over its fruiting season; but I enclose a branch from a yellow fruiting plant. The berries are nearly double the size of the ordinary Missouri Currant; but the most careful examination fails to find any specific difference between it and the eastern form of *R. aureum*. Our stock originally came from Mr. Siler, then of Saint George's, southern Utah.

When in Salt Lake City in 1873 our party was received very generously by the Mormon people, and one of them, Mr. Jennings, gave us the freedom of his beautiful garden. The Black Currants were then growing in great quantity, and they were nearly as large as we grow Houghton Seedling Gooseberries here. The flavor was delicious, and I think most of our party gathered them by the handful, and enjoyed them hugely. But I have never found them so piquantly toothsome here, nor are the fruits so large and tempting. They seem to require the dry soil and arid climate of the central regions of our country.

I have seen notices of this Crandall Currant for a year or more past; and desiring to try everything, sought last spring to buy a few hundred somewhere. But after reading the statement that it was a variety of the Missouri, and suspecting its identity with our own Utah Black and Utah Yellow, we felt very thankful that we had failed to spend our money.

If careful comparison shows the form more lately introduced to be identical with the Utah Black it would be advisable to drop the name of "Crandall."

Germantown, Pa. *Thomas Meehan.*

## Recent Publications.

*Annals of Horticulture in North America, for the year 1889.* By L. H. Bailey. New York: Rural Publishing Company. 12mo; pp. 249.

This is the first volume of a proposed series of year-books, which are intended to make a current record of horticultural progress. The first half of the book treats of such general subjects as the yields of various crops for the year with their prices, the newer fruits which are adapted to special localities, recent tendencies in ornamental gardening, the diseases of plants, insects injurious to plants, horticultural work in the Department of Agriculture and in the Experiment Stations, with notes on the transactions of the more important horticultural associations in the country. Many of the articles in this part of the book have been prepared by specialists and some of them have been taken from the leading horticultural journals of the world.

The last half of the book is devoted to special annals, the most important of which will be considered the list of plants introduced in 1889, a catalogue of kitchen garden vegetables which were offered for sale in North America in 1889, and the plant portraits which have appeared during the same year. It will hardly be questioned that a carefully prepared year-book of this sort will have great value for reference and it will become of greater value as the years pass on. This particular

volume, as Professor Bailey explains, has been somewhat hastily prepared and naturally he has not had the co-operation of the horticulturists of the country to such an extent as he should be able to count upon hereafter when the enterprise has become an established success. One is hardly disposed, therefore, to search for any shortcomings in the book, but rather to welcome it as the beginning of a series which will prove of substantial value to American horticulture. We are glad to note the promise that the scope of the succeeding volumes will be broader so as to include more of European horticulture.

Perhaps the chapters of most value are those which deal directly with plants of the year. The list of kitchen garden vegetables seems very complete and it will furnish invaluable material for studying plants in the future. It ought also to serve a good purpose in preventing the duplication of names. In looking over the catalogue of plant portraits for 1889 we observe that some half dozen of the portraits which have appeared in this journal during the year have been omitted. Some of these are important, as, for example, the portraits of *Croton Alabamensis*, *Philadelphus Lemoinei* and *Yucca elata*. We observe also that none of the illustrations in the *American Agriculturist* have received any credit; but no doubt such errors will be less frequent in the succeeding numbers.

## Notes.

Eighty million feet of timber were contained this year in the annual "drive" of logs sent down the Connecticut River, most of it being consigned to Holyoke, Massachusetts.

A large part of the cranberry picking on Cape Cod is now done by Portuguese, both men and women being employed. There are now more than a thousand of these immigrants in Provincetown, forming about one-fourth of its population.

Hollyhocks, single and double, formed the chief feature of the Massachusetts Horticultural Society's show in Boston on July 19th. Mr. Joseph S. Fay, of Wood's Holl, sent the largest contribution, while those of Mr. C. F. Curtis, of Jamaica Plain, Messrs. Edwin Sheppard & Son, of Lowell, and Dr. C. G. Weld, of Brookline, were also remarked.

The Japanese Box Elder (*Negundo cissifolium*), which has been flowering and fruiting in this country for several years, seems to be a most desirable tree for the borders of a small lawn. It is a round-headed tree, with clean, thick foliage, and it is strikingly beautiful in midsummer on account of the delicate color of its young shoots, which continue to grow after most other trees have finished their growth for the year.

One objection to *Nymphæa tuberosa*, of which Mr. Horsford speaks in another column, is that by the production of tubers it multiplies so rapidly that it will soon fill a large pond, and may crowd out plants of less aggressive vitality. Mr. Gerard finds that *N. Marliacea* is also prolific of tubers, so that it will soon be within reach of every one, and it, too, may prove a dangerous competitor in the struggle with other aquatics.

In his article on Botticelli, published in the *Century Magazine* for August, Mr. W. J. Stillman says with reference to the artist's picture of "Spring," where the foreground turf is thickly dotted with the common flowers of Tuscan meadows: "The non-occurrence of the Anemone, now one of the most splendid attractions of the flora of Tuscany, in this collection of flowers, which is painted with almost scientific exactitude, is considered as a proof of the late arrival of that flower from the East, and that it did not exist there in the time when this picture was painted. It is certain that if it had been known in the fields of Florence its conspicuousness of form and color would have made it impossible to leave it out of this gorgeous *hortus siccus*."

The house once occupied by Governor Endicott, which was recently torn down in Salem, Massachusetts, was one of the oldest in the commonwealth. It is said to have been first framed in England, then brought across the ocean and set up in Gloucester. In 1628 it was purchased by Endicott and taken apart, removed to Salem and rebuilt on what is now the corner of Washington and Church Streets. After the Governor's death in 1665 it was still for some time occupied by his family, and for a while the sessions of the General Court were held within it. Afterward it was moved a short distance away, and went through many vicissitudes, its last service having been as a storage-house. Its timbers were found to be of English Oak of great size and still in apparently perfect condition.

Bulletin No. 10 of the Minnesota Experiment Station speaks as follows with regard to the bagging of Grapes: "The varieties treated were Delaware, Early Victor and Brighton. The fruit was bagged with paper bags when about the size of small peas. At the harvest, the bagged grapes were better in every case than those not bagged, but the most marked difference was with the Brighton, the bunches of which were clean, perfectly colored, and the sweetest grape I have ever eaten. Those exposed were not so good in any way, being very dusty and uneven in ripening. In our previous trials with Concord and Worden and some other varieties, the result has been uniformly in favor of the use of bags as a covering." The cost of bagging was estimated as varying from a quarter of a cent to one cent a pound.

In answer to a question, Mr. F. W. Burbidge writes in *The Garden:* "The first Cattleya ever introduced into Britain was *C. labiata*, found by Mr. William Swainson in the Organ Mountains, Brazil, and brought to England in 1818. On this plant Lindley founded his genus Cattleya in honor of the late Mr. W. Cattley, of Barnet, one of the first amateurs in England to form a collection of Orchids. Mr. Cattley died in 1832 and his plants went to the collection of Mr. Knight (now Veitch's) at Chelsea. If this true old *C. labiata* exists wild now in Brazil, its locality is unknown, and it has not been imported for forty years or more. Sander has had men hunting for it for years, but it is now believed to be extinct. In cultivation it is rare and valuable, and is known as the old autumn-blooming *C. labiata* or *C. labiata vera*. Botanically, however, all the Cattleyas are now considered as geographical forms or varieties of the old *C. labiata*. It has a robust constitution, as is proved by its having lived on so long in our collections, since the last importation came nearly half a century ago."

In an article recently published in *Nature* it was stated that "as far as known at present the Roses of western Asia have no Sanscrit name and were not known in ancient India. Yet *Rosa Damascena* is grown on a large scale for the manufacture of Rose-water and essence of Roses throughout northern India as far as Ghazipur, in twenty-five degrees north latitude. It is not impossible that the western Roses were introduced into India by the Mohammedans. As there is no Sanscrit word, so is there no original term for the Rose in Hindoo. In most Indian languages the cultivated Rose is called *gúl*, which is the Persian name. It is called *gúláb*, which really means Rose-water, unless, indeed, as sometimes stated by Munshis in India, *áb* in this case is a suffix with no separate meaning. In addition to their local names, some of the wild Roses of Himalayas are often called *gúláb*, *bán gúláb* (the Rose of the Forest or Wild Rose). These facts seem to us of interest, as illustrating that wide-spread influence of the Persians which has been dwelt upon in the articles on the History of the Art of Gardening which have recently been published in Garden and Forest.

The New York *Sun* recently contained a long description of the Vanderbilt estate near Asheville, North Carolina. Not only the magnitude of the enterprise but the intelligence with which it has been undertaken puts it at the head of all contemporary enterprises of the kind in this country. Five thousand acres with a frontage of four miles on the French Broad River were purchased by Mr. George Vanderbilt in a region famed for beautiful scenery and a delightful climate. Messrs. F. L. Olmsted & Co. were employed to aid in choosing and preparing a site for the house, instead of being called in—as is so often the case with landscape-gardeners—after the architect had done his work. The house, which Mr. R. M. Hunt will build, is to be of Indiana limestone, and, with its connected offices, nearly 500 feet in length. It has been designed in an Italian Renaissance style, and one façade will be supported by a retaining-wall rising thirty feet from the face of a hill-side, commanding a superb distant mountain view. Clay is abundant in the vicinity, and a brick-making plant has been set up, as two or three million bricks will be needed for the house and its dependencies, in addition to tiles for the underdraining of the land. Other materials will be brought to the spot by a branch railroad two and a half miles long, constructed for the purpose, from the nearest station. The intervale lands on the river are to be farmed, while of the hill lands fully four thousand acres are to be improved as a forest under the advice of the landscape architects. It bids fair to become, in a few years, one of the most interesting places in America for the lover of rural life on a lordly scale to visit, and one which will represent not merely a large outlay of money, but the intelligent co-operation of great wealth with the best science and the highest art that the time affords.